



National Aeronautics and
Space Administration
Lyndon B. Johnson Space Center
Houston, Texas



Timetable

The schedules of events for Saturday's JSC Open House and Ballunar Liftoff are detailed on Page 3.



Overseas interest

Japan's minister of state for science and technology checks out a Mars meteorite. Photo on Page 4.

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Cabana leads first assembly flight

Astronaut Bob Cabana will command the first space shuttle mission to carry hardware to space for the assembly of the International Space Station in late 1997.

Joining Cabana on the flight deck for STS-88 aboard *Endeavour* will be Pilot Rick Sturckow, a member of the 1995 astronaut class who will be making his first space flight. Rounding out the crew are veteran Mission Specialists Nancy Currie, Jerry Ross and Jim Newman. The seven-day mission will feature mating of the U.S.-built Node 1 station

element to the Functional Energy Block, or FGB, which already will be in orbit, and two space walks to connect power and data transmission cables between the Node and FGB. The FGB, built by Boeing and the Russian Space Agency, is scheduled for launch on a Russian Proton rocket from the Baikonur Cosmodrome in Kazakstan in late 1997.

"We're pleased to have Bob command this first flight to begin the assembly of the International Space Station," said David Leestma, director of Flight Crew Operations. "This

is a talented crew facing a very challenging and exciting mission."

Node 1 will be the first space station hardware delivered by the shuttle. It has two pressurized mating adapters—one attached to each end. One PMA is permanently mated to the FGB and the other used for orbiter dockings and crew access to the station. Node 1 also will hold an International Standard Payload Rack used to support on-orbit activities after activation on the fifth shuttle/station assembly flight.

"I couldn't be more pleased by

the selection of this exceptional crew for this mission," said Space Station Program Manager Randy Brinkley. "I have every confidence in Col. Bob Cabana and the STS-88 crew and their successful execution of this historic endeavor."

Once the shuttle reaches the orbiting FGB, Currie will use the robot arm to place Node 1 atop the Orbiter Docking System. Cabana will fly *Endeavour* to within 35 feet of the FGB, allowing Currie to grapple it and place it on the Node's Pressurized Mating Adapter.



Robert Cabana

Atlantis returns to launch pad

Atlantis was returned to its ocean-side launch pad this week at Kennedy Space Center for final preparations for launch around Sept. 12.

STS-79 will carry U.S. astronaut John Blaha and five crewmates to orbit for the start of a four-month research mission for Blaha aboard the Russian Mir Space Station.

Atlantis was slowly transported to Launch Pad 39A on Tuesday, outfitted with two new solid rocket boosters and a new fuel tank, awaiting the arrival of the STS-79 crew. Commander Bill Readdy, Pilot Terry Wil-

cutt and Mission Specialists Jay Apt, Tom Akers, Carl Walz and Blaha will leave for KSC on Sunday for a dress rehearsal of the countdown next week that will lead to their blastoff on the fourth shuttle-Mir docking flight.

A firm launch date for *Atlantis* will be set on Aug. 29 following the traditional Flight Readiness Review which will be held by NASA managers at KSC.

Meanwhile, engineers installed three refurbished main engines in the shuttle *Columbia*, taking one more step toward its launch Oct. 31 on STS-80. Commander Ken Cockrell, Pilot Kent Rominger and Mission Specialists Tammy Jernigan, Tom Jones and Story Musgrave will spend 16 days in space, deploying and retrieving a pair of science satellites, while Jernigan and Jones conduct two space walks to refine techniques for assembly of the International Space Station. Musgrave will be making a record-tying sixth flight into space aboard *Columbia*.



JSC Photo by Andrew Patnesky

OPEN HOUSE PREPARATIONS—John Scott of the Structures and Mechanics Division, left, and Gene Vickers of Lockheed Martin prepare a shuttle drag chute display for Saturday's JSC Open House in the high bay of Bldg. 13. Eighteen JSC buildings will be open for the public to view the inner workings of the center. For more details on the Open House and Ballunar Liftoff Festival schedules, see Page 3.

Blood drive taps rich vein at JSC

JSC employees made a difference in their community Thursday, with 405 people turning out to donate blood.

St. Luke's Blood Donor Program collected 374 blood donations after deferrals, compared to 300 donations collected at the last drive, once again setting a center record.

Dan Mangieri, one of many coord-

inators, thanked all those who donated and helped set up the drive.

"They should all be commended for their contributions," Mangieri said. "The drive was a huge success once again."

Under the St. Luke's agreement with JSC and contractors, the hospital will be providing blood assurance coverage for all JSC personnel.

Lucid, cohorts welcome latest Mir additions

By Natasha Calder

Cosmonaut Researcher Shannon Lucid and her Mir 21 crewmates welcomed the Mir 22 crew on board the Russian space station on Monday.

Mir 22 Commander Valery Korzun and Flight Engineer Alexander Kaleri, along with French Cosmonaut Researcher Claudie Andre-Deshays, docked their Soyuz TM-24 spacecraft with Mir on Monday after a Saturday launch from Russia. They will join Lucid, Commander Yuri Onufrienko and Flight Engineer Yuri Usachev for a two week stay on the outpost. Astronaut John Blaha, the final member of the Mir 22 crew, set to arrive via STS-79 in September, was in Russia to see the launch and receive some refresher training before joining the STS-79 crew later this week.

The trio's arrival was a welcome sight for the Mir 21 crew, which has gone several months without visitors.

"Things are exciting here on Mir with the new crew. We have six people on board station — four from Russia, one from France and one from America," Lucid said in an interview Monday. "It is the first time Yuri, Yuri and I talked face-to-face with a different person in about five months, so it's pretty exciting up here on Mir."

The international crew is indicative

of how life will be on the International Space Station. Lucid said the experiences being gathered by the joint cooperation on the Russian space station are providing the groundwork for the future space station.

"One of the main objectives of this cooperative program that we have with the Russians right now, which we call Phase 1, is so that we can learn how to work with other cultures, and learn to work with other nations, and especially working with the Russians since they will have such a vital part in the space station that

we will be building," Lucid said. "It gives not only astronauts and cosmonauts the opportunity to learn how to work together, it also gives the ground support people the opportunity to learn how to work together to mix the cultures to make a good working environment."

The multiple docking operations needed to accommodate the Mir 22 mission underscore the versatility of the Russian program which contributes valuable flight operations experience to the International Space Station team. Currently, the Progress supply capsule which had been docked with Mir has been undocked and moved to a parking orbit around the station to accommodate both Soyuz capsules now currently docked with Mir.

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Lawrence



Wolf

JSC, school district team up on 'Longhorn Project'

High school agricultural education project to utilize JSC land near Rocket Park

JSC and the Clear Creek Independent School District are joining forces to develop a first of its kind facility for furthering agricultural education at the high school level. The project will continue NASA's mission to work with the educational community to inspire students and create learning opportunities.

"The Longhorn Project" — named for the cattle breed that is synonymous with the State of Texas — will offer students the opportunity to learn about cattle care and breeding, aquaculture, and fruit and vegetable cultivation.

A 60-acre tract west of Rocket Park and bounded by Saturn Lane on the south and the Antenna Test Range on the north has been identified for use for the project. The tract is composed of a 35-acre pasture for grazing, a 10-acre wildlife habitat pond, an 8-acre feedlot with a small barn, and 7 acres for aquaculture ponds, gardens and orchards.

Through agricultural education, students learn science, mathematics and technology skills that are the cornerstones of expertise that will be needed to run the space program in the future. By using innovative meth-

ods and interdisciplinary projects such as this, JSC is helping to provide the environment to develop the scientifically and technically literate citizens of the future. JSC already is involved in a number of scientific and educational efforts involving horticulture, including development of synthetic soils to grow plants in space and the use of plants to recycle the atmosphere in future spacecraft and extraterrestrial bases.

Funds for construction of facilities, fencing, earthwork, and associated equipment will come from donations to CCISD from area business and

industry. The State of Texas and various agricultural and cattle breeding organizations are donating cattle, fish, seeds, fruit trees, vegetables, and other supplies. The school district will provide maintenance of facilities and groundskeeping for the project. JSC is permitting use of the land and providing technical expertise for both the design and construction of the project.

"We see this as an opportunity to be a partner with the Clear Lake community and to help to provide a resource for young people planning to enter the agribusiness field,"

said JSC Director George Abbey. "The Clear Creek Independent School District has needed a facility of this kind to teach students in a hands-on environment and we are very pleased to be a part of this project. We are especially pleased with the enthusiastic response for support we have received from industry, state, and federal offices in advance of a public announcement of the Longhorn Project."

Initially, five head of registered longhorn cattle will be brought in to stock the project. Plans include a

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